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The Department of Telecommunications and Information Services Needs to Simplify Its Rate Model, Improve Customer Service, and Revamp Performance Measures

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CITY AND COUNTY OF SAN FRANCISCO

OFFICE OF THE CONTROLLER

Ed Harrington
Controller

Monique Zmuda
Deputy Controller

November 17, 2006

Audit Number 05053

Chris Vein, Executive Director
Department of Telecommunications & Information Services
875 Stevenson Street, 5th Floor
San Francisco, CA 94103

Dear Mr. Vein:

The Controller's Office, City Services Auditor, presents its audit report of the Department of Telecommunications and Information Services (DTIS). The audit objectives were to assess the quality and cost of DTIS' services to determine how DTIS can improve its service to clients and its rates, and to assess the quality of DTIS' performance measures and the accuracy of its reported results.

We concluded that DTIS can reduce its costs and improve its customer service by simplifying the rate model and making its rates more equitable, predictable, and transparent for its clients, and by consolidating overlapping and duplicate functions both within DTIS and with other City departments. Implementing generally recognized project management techniques would help DTIS ensure accountability for its projects. DTIS can also improve its ability to measure its successes, make informed decisions, and identify areas needing improvement by developing performance measures that reflect the services it provides and by establishing data collection and reporting mechanisms to accurately reflect its performance.

The audit includes 23 recommendations for DTIS to reduce costs, improve the quality of services, improve the accuracy of accounting and billing methods, eliminate overlapping or duplicate services, and improve overall accountability for performance. The department's response to the audit is attached as Appendix B. DTIS has agreed with most of the audit recommendations and expressed an interest in making changes within the organization.

We appreciate the assistance and cooperation that DTIS staff and staff in other City departments provided to us during the audit.

Respectfully submitted,

Ed Harrington
Controller

cc: Mayor
Board of Supervisors
Civil Grand Jury
Budget Analyst
Public Library

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City and County of San Francisco
Office of the Controller - City Services Auditor

The Department of Telecommunications and Information Services Needs to Simplify Its Rate Model, Improve Customer Service, and Revamp Performance Measures

Audit No. 05053
November 17, 2006

Purpose of the Audit

We assessed the quality and cost of services provided by the Department of Telecommunications and Information Services' (DTIS) to determine if it can improve its service to clients and its rates. We also reviewed DTIS' performance measures to determine their meaningfulness and the accuracy of their reported results.

Highlights

DTIS' rate model is complex and costs over $1.8 million annually to administer, including 35,000 labor hours (17 FTEs) and the nonlabor costs of maintaining systems to support the budget development, rate setting, and client billing processes. Despite its complexity and cost, the rate model does not reflect the actual cost of services or ensure fair and accurate billings for the $90 million of services that DTIS provides its clients annually.

Clients often pay different rates for the same service and rates differing from those published in its *Rate Handbook*. For example, the published hourly rate for database administration services was $108.45 per hour, but DTIS charged 10 of the 15 departments using these services rates ranging from $112 to $162. The discrepancy between the published rates and the actual rates paid for the services reviewed totaled over $4 million, with some departments being undercharged for some services and overcharged for others. As a result, some departments subsidized the cost of service to others and clients could not control or predict their information technology expenditures by changing their level of use.

Clients are dissatisfied with the cost of DTIS services, and 61 percent (14 of 23) of clients responding to a satisfaction survey would not continue to use DTIS' services if given autonomy over their services. Some clients have established their own internal IT functions or purchased IT services from other sources, thereby increasing costs for remaining clients and causing the City to pay for duplicate services.

DTIS maintains three separate help desks, at a cost of $1.2 million, although previous studies of DTIS and industry standards recommend having only one help desk in an organization. Consolidating the help desks would achieve savings and improve service to clients by eliminating overlapping duties and responsibilities and allowing DTIS to standardize its help desk policies and procedures. In addition, DTIS provides operator services, alarm monitoring and maintenance functions, and website services that are also provided by other city departments or vendors.

DTIS reported reliable and accurate results for only three of its nineteen performance measures, and only ten of its measures were meaningful and useful. Not knowing how well it is performing in key areas makes it difficult for DTIS to measure its success or identify areas needing improvement.

Recommendations

The audit report includes 23 recommendations for DTIS to reduce its costs, improve its quality of service, improve the accuracy of its accounting and billing methods, eliminate overlapping or duplicate services, and improve its overall accountability for performance. Specifically, DTIS should:

- Simplify the rate model so costs are more easily identifiable and reflect the actual cost of service.
- Develop a customer service evaluation and improvement plan regarding client satisfaction with its services, costs, and billing methods.
- Consolidate the help desk, consolidate operator and monitoring functions, and eliminate duplicate website costs to save around $1 million annually and improve efficiency.
- Establish performance measures that are meaningful and establish data collection and reporting mechanisms to accurately reflect performance.

Copies of the full report may be obtained at:
Controller's Office • City Hall, Room 316 • 1 Dr. Carlton B. Goodlett Place • San Francisco, CA 94102 • 415.554.7500
or on the Internet at www.sfgov.org/controller

INTRODUCTION

BACKGROUND

The City and County of San Francisco (City) has made several changes in the past decade in how it administers information technology (IT) and telecommunications. In 1996, the City adopted an IT Strategic Plan, developed by KPMG Peat Marwick, LLP, which became the foundation for the City's current IT architecture. The plan resulted in creation of the Department of Telecommunications and Information Services (DTIS), the Committee on Information Technology (COIT), and the Strategic Management and Planning Group. In 2005, DTIS, the Department of Public Works, and Administrative Services merged to create the General Services Agency. At the time of this audit, changes in DTIS' leadership and governance structure were in progress.

DTIS' Primary Revenue Source Is Client Billings

DTIS is an internal service fund department. Internal service funds finance and account for operations that provide goods or services to other governmental units on a cost-reimbursement basis. The goal of the fund is to measure the cost of providing goods or services for the purpose of fully recovering that cost through fees or charges. Governments commonly use internal service funds for a wide variety of activities, including information systems, central garages and motor pools, copying and printing services, purchasing, and central stores.

DTIS' fiscal year (FY) 2005-06 budget included 88 percent of its revenues from departmental work orders, which are payments from clients to DTIS for services rendered; 10 percent from the general fund; and two percent from cable franchise fees. DTIS also receives "off budget" revenues during the year for additional work or services. DTIS uses a rate model that it developed in 2000 to calculate the rates for billing client departments and recovering its costs. DTIS sets its rates during the annual budget process and publishes them in its *Rate Handbook*. DTIS distributed its FY 2005-06 expenses among the following IT and telecommunication service categories:

EXHIBIT 1 Service Categories and Expenses

Service Category	Total FY 2005-06	% of Total
Indirect Services:		
Pass-throughs and other charges	$17,756,924	19.7
Telephone Billing	15,058,784	16.7
Direct Services:		
Applications and database administration (DBA) services	18,209,689	20.2
Other special projects and citywide initiatives	8,111,999	9.0
Mainframe services	6,772,087	7.5
Maintenance and support for public safety emergency systems	6,021,188	6.7
Wireless services	4,674,087	5.2
Telecommunications consulting for clients	3,517,733	3.9
Local Area Network (LAN) & Wide Area Network (WAN) client support	3,392,054	3.8
Enterprise E-mail	1,784,832	2.0
WAN maintenance	1,661,127	1.8
SFGTV (Government Cable Channels)	867,444	1.0
Server hosting	697,170	0.8
Citywide public website services	554,960	0.6
Geographical Information System (GIS)	546,960	0.6
Network planning, design, & security	427,737	0.5
Alarm monitoring	129,000	0.1
Citywide technology research & adoption	99,867	0.1
Total	**$90,283,644**	**100.0%**

Source: DTIS revised budget as of 3/27/06

OBJECTIVES, SCOPE, AND METHODOLOGY

The audit objectives were to assess the quality and cost of DTIS' services to determine if DTIS can improve service to clients and rates, and if so, how. We also reviewed the meaningfulness of the department's performance measures and the reliability of their reported results.

We reviewed three service categories:

- Applications and database administration (DBA)
- Mainframe
- Maintenance and support for public safety emergency systems (public safety services)

We selected these services because they range across a wide spectrum of clients, represent 54 percent of DTIS' direct service budget and 34 percent of its total budget, and receive many requests for service. We reviewed DTIS' rate model (rate setting process and billing methods) because of its complexity and its effect on service quality and cost. We did not review all citywide information technology and telecommunication services or the security of the City's information and telecommunications systems. Although the focus of the audit was not to determine which services should be centralized or decentralized, the audit nevertheless touches upon this subject, particularly where necessary to address how the quality and cost of service can be improved. Although building security was outside the scope of the audit, we addressed this issue because we observed that one of DTIS' facilities was not secured and was susceptible to theft.

The audit methodology included:

- Examining the rate setting and billing process by reviewing three years of billing history
- Estimating the cost of administering the DTIS rate model
- Researching IT rate models and other similar systems
- Assessing DTIS' performance measures to gauge their accuracy/reliability and usefulness/meaningfulness
- Conducting customer satisfaction surveys
- Interviewing DTIS staff and management, industry experts, vendors, and knowledgeable staff in other City departments
- Observing DTIS operations at 875 Stevenson, 901 Rankin, 1011 Turk, and the Central Radio Station (CRS) at Twin Peaks
- Benchmarking best practices and industry standards for mainframe, applications development, and database administration

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. We believe that we adequately planned and performed the audit to achieve the audit objectives and that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives, as required by these standards. The standards require that the audit organization be free both in fact and in appearance from organizational impairments to independence. COIT was established as part of the Controller's Office and had governance responsibility for some of the City's IT decisions. Because we did not review COIT, its functions, or its relationship with DTIS and the audit was limited to DTIS, our independence was not impaired. However, we are disclosing this relationship to comply with the requirement to disclose situations that some may perceive as a possible impairment.

Staff: Pablo Federico, Audit Manager
Alexandra Bidot, Audit Staff
Randle McClure, Audit Staff

CHAPTER 1 – COST AND SERVICE QUALITY

DTIS' rate model is complex and costs over $1.8 million annually to administer, including the cost of billing departments for services provided. Despite its complexity and cost, the rate model does not reflect the actual cost of services, ensure fair and accurate billings for the $90 million of services that DTIS provides its clients annually, or allow clients to control their IT spending by changing their use of DTIS' services.

As a result, clients are dissatisfied and 61 percent (14 of 23) of clients responding to a customer satisfaction survey would not continue to use DTIS' services if given autonomy over their IT services. Some clients have established their own internal IT functions or purchased IT services from vendors – in some cases while continuing to pay DTIS for the same service. This has resulted in inefficient use of DTIS and City resources, duplicate costs, and increased costs for IT services.

Finding 1.1. Complex Rate Model Costs Over $1.8 Million but Does Not Reflect Actual Costs

The rate model's $1.8 million administrative cost includes 35,500 labor hours (17 FTEs) and the nonlabor costs of maintaining systems to support the budget development, rate setting, and client billing processes. DTIS' clients absorb this cost through the rates. This level of effort and cost are not justified because:

- Clients often do not pay published rates; billings do not reflect actual units of service provided.
- Clients often cannot control costs by changing their use.
- Rates do not reflect actual cost of service, which is the basic purpose of an internal service fund. Instead, the rate model functions as a tool to ensure that DTIS recovers its budgeted expenditures rather than to accurately reflect the fixed and variable costs associated with each specific service.
- Clients are dissatisfied with cost and the rate model.

Clients Often Do Not Pay Published Rates

The rates that clients actually pay often differ from the published rates. As a result, clients pay different rates for the same service and subsidize the cost of service to others, and DTIS over- or underrecovers its costs of services. Clients do not see that they are not paying the published rate because their billings always reflect the correct rate; DTIS adjusts the number of service units provided.

For some services, DTIS calculates the billings by multiplying the current rate by the units of service provided in an earlier fiscal year, usually one or two years earlier. However, DTIS did not charge the correct rate for some clients according to the calculation methods they developed. The following examples of DTIS' charges to clients for printing costs in FY 2003-04 and FY 2004-05 demonstrate some of the discrepancies between the published prices and the actual prices paid:

EXHIBIT 2 Printing Charges

	Adult Probation		Controller's Office		Trial Courts	
	FY 2003-04	FY 2004-05	FY 2003-04	FY 2004-05	FY 2003-04	FY 2004-05
*Lines of Print	28,336	19,210	2,769,754	1,700,073	231,302	243,172
Published Rate	x $0.235	x $0.25	x $0.235	x $0.25	x $0.235	x $0.25
Expected Bill	$6,659	$4,803	$650,892	$425,018	$54,356	$60,793
Actual Bill	$41,852	$44,164	$468,732	$305,979	$54,356	$30,397
Over/(under)-charge	$35,193	$39,361	($182,160)	($119,039)	Accurate bill	($30,397)
Actual Rate Paid	$1.47	$2.30	$0.18	$0.17	$0.235	$0.125
	Adult Probation was overcharged in both years. Although the lines of print decreased in FY 2002-03, the corresponding billing for FY 2004-05 increased. The slight increase in the rate in FY 2004-05 was insufficient to account for the billing increase, as shown by the significantly higher rate that Adult Probation actually paid.		The Controller's Office was undercharged in both years. The billing decreased as expected in FY 2004-05 based on the fewer lines of print in FY 2002-03. However, the rate the Controller's Office actually paid shows that the billing decreased more than it should have since the published rate increased.		The Trial Courts were accurately billed in FY 2003-04, but were undercharged in FY 2004-05. Although the printed lines increased in FY 2002-03, the billing decreased in FY 2004-05, as did the actual rate paid.	

* Charges are based on a rate per 100 lines of print (i.e., quantities are expressed per 100 lines of print). Bills are based on the number of lines printed two years prior (e.g., the number of lines printed in FY 2001-02 are used to calculate the bills for FY 2003-04).

Source: DTIS billing system charges and mainframe records for lines of print

DTIS made similar adjustments for other services that we reviewed. For example, the published rate for DBA work in FY 2004-05 was $108.45 per hour, but DTIS charged 10 of the 15 departments using these services different hourly rates ranging from $112 to $162. The discrepancy between the published rates and the actual rates paid for the three services reviewed (mainframe, applications development and DBA, and public safety services) totaled over $4 million, with some departments being undercharged for some services and overcharged for others.

These examples demonstrate that the cost to develop and administer the rate model is not justified because DTIS adjusts client billings as needed to recover its costs without regard to the effect it has on the actual rates that clients pay.

Reasons why DTIS makes these adjustments vary:

- Changes to DTIS' and departments' budgets sometimes occur after the budgets are balanced and submitted, resulting in revenues and expenditures being out of balance. The final rates are based on the budget submitted to the Board of Supervisors for review, rather than on the final adopted budget.
- Departments sometimes do not have enough money to pay the actual cost of services provided during the year or underestimate their budget for services. DTIS makes internal adjustments to recover costs, including shifting the costs to other product lines or to overhead.
- DTIS bills project planning costs to overhead when funding for the work is not yet received. DTIS redistributes these costs through the rate model making them difficult to track.
- DTIS redistributes some of its costs between services. Division managers are allowed to trade costs between services or projects as they deem appropriate, creating a lack of transparency in billing and accounting.

Clients Often Cannot Control Costs by Changing Their Use

Clients cannot control or predict their IT expenditures by changing their level of use because of DTIS' adjustments to their billings. As shown in the examples, a client may reduce its level of use from one year to the next, but its cost can actually increase. The adjustments make it difficult for clients to confirm the accuracy or appropriateness of DTIS' charges and to assess whether DTIS' rates are competitive or reasonable compared to other service providers.

Clients also have little to no control over their charges for fixed-cost services such as enterprise-wide services and infrastructure work.[1] DTIS allocates these costs among its clients, but the costs are not directly attributable to usage or benefit. For example, infrastructure work usually benefits multiple departments and must be done whether it is separately budgeted or not. DTIS allocates infrastructure costs across its product lines although the costs are not affected by client consumption.

Industry literature recommends charging clients only for unshared IT expenses that clients can control through their rate of use. Also, a report of DTIS' compliance with ITIL[2] standards recommended that DTIS use the rate model only for work that clients can influence through their consumption. This practice assumes that users have control over their own use and will therefore make better decisions when faced with the costs of the actual level of IT services consumed. Despite the standard, DTIS includes these costs in the rates because of reduced general fund support for IT infrastructure over the last few years and the expectation for DTIS to fully recover its costs of operations.

Rate Model Does Not Reflect Actual Costs

DTIS cannot ensure that it fully recovers its cost of services through the rates because the rate model is based on DTIS' budgeted expenditures rather than the actual cost of service. Although DTIS has historically recovered its total costs because of the adjustments it makes to client billings, it has over- and underrecovered its budgeted expenditures for specific services. For example, by adjusting client billings in FY 2004-05, DTIS recovered $1.8 million less for mainframe services but recovered $82,000 more for DBA services than it should have recovered for these services. As a result, the rate model does not meet the requirements for internal service funds to improve financial management and fully recover the cost of services.

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[1] Enterprise services are products or services, such as e-mail, that are provided or administered centrally for multiple users. Infrastructure work includes the labor, hardware, and software necessary to support the City's IT and telecommunications services.

[2] ITIL (the Information Technology Infrastructure Library) is a framework of best practices, drawn from the public and private sectors, that facilitate the delivery of high quality IT services. ITIL outlines an extensive set of management procedures to achieve quality and value for money in IT operations.

DTIS bills its clients for the number of units of sale (e.g., per hour, per number of devices maintained) provided for a service or through a monthly fee, but tracks its costs by division. The units of sale do not always reflect how DTIS incurs costs for a service because some divisions provide multiple types of services and some services overlap divisions. The mix of fixed and variable costs differ for a division and a service and can be affected by the number of clients that the costs can be distributed among and the allocation of indirect costs. For example, DTIS charges public safety clients for wiring work based on the number of fire alarm and police call boxes, but the cost of service is based on the labor and materials to install or relocate these devices. Since DTIS does not track its costs for installing or relocating each device, it cannot reconcile division costs with the actual costs incurred or assess the reasonableness of the rate for the service.

Clients Dissatisfied With Cost and Rate Model

Clients are not satisfied with the cost of DTIS services and with its rate model and 61 percent (14 of 23) of clients responding to our customer satisfaction survey would not continue to use DTIS' services if given autonomy over IT services. In addition,

- 58 percent (14 of 24) of the respondents are not satisfied with the billing detail that DTIS provides
- 67 percent (16 of 24) of the respondents do not understand the rate setting and billing methods
- Clients perceive that DTIS' rates are neither competitive nor cost-effective, and 92 percent (22 of 24) of the respondents believe that the same services are available elsewhere for a lower cost
- Over 80 percent (19 of 23) of the respondents believe that DTIS can improve its cost of service by increasing its accountability to clients, lowering overhead costs, changing the funding structure, and reducing its scope of operations

Clients have sought services from other sources in part because they are dissatisfied with the rate model and DTIS' costs, accounting, and billing methods. Some departments have purchased IT services such as mainframe and website services from vendors instead of from DTIS, while other departments have increased their internal IT capacities. This has increased the costs for remaining clients and has contributed to duplicate costs for IT and telecommunication services across the City.

The City has an interest in maintaining certain services internally because it can achieve cost effectiveness, increase system security, and maintain IT and telecommunication standards for City systems. In some cases, departments' decisions to use vendors increased costs for remaining clients because the City invested in citywide solutions which have fixed costs that are allocated among the clients. Security issues may also arise as departments rely on a decentralized matrix of vendors for their IT and telecommunications services that may not use the same degree of redundancy and security as City systems. Additionally, establishing and maintaining standards for IT and telecommunications is difficult when departments use a variety of vendors and technologies that may lead to system incompatibilities and inhibit the City's business processes.

Recommendations:

1. DTIS should simplify the rate model and restructure it to reflect the actual cost of services:
    - Reduce the number of product lines
    - Structure the units of service to reflect how costs are incurred (e.g., change the unit of service for public safety wiring work from number of devices to an hourly rate) and to allow clients to control their costs based on their use of services
    - Identify and explain the variable and fixed costs for each service in the *Rate Handbook*

2. DTIS should remove from the rate model the costs of infrastructure work and enterprise services that are not affected by clients' level of use. DTIS should request a separate budget allocation for these services and revise its rate model accordingly.

3. DTIS should track the costs to provide each service and update the rate model annually to reflect actual costs. This should include developing policies and procedures for time entry and cost allocation and should allow clients to understand the relationship among budgeted work, percentage of work complete, and billing for each project.

4. DTIS' billings should reflect the actual number of units of service provided to ensure clients receive fair and accurate bills.

5. Before accepting an off-budget project, DTIS should identify its funding source, how its cost will impact the allocation of costs among city departments, and whether resources will have to be reallocated from existing projects.

Finding 1.2. Customer Satisfaction Has Declined; DTIS Needs to Measure Satisfaction

DTIS has not addressed dissatisfaction issues identified through client surveys performed in 2001 and 2002, and responses to a survey we conducted showed that customer satisfaction has declined:

- 61 percent (14 of 23) of respondents would not continue to use DTIS if given autonomy over IT services
- Over two-thirds (17 of 24) believe that IT services provided elsewhere would be of better quality than what DTIS provides

A consultant survey of DTIS' clients in 2001 stated that DTIS is a technology laggard and poor service provider and that these conditions had become a major barrier to its success. The report stated that it was critical for DTIS to address these issues "broadly and forcefully." A year later, COIT conducted a client survey and graded DTIS' overall service delivery as acceptable and meeting expectations.

Clients responding to our survey were slightly less satisfied with DTIS' quality of service than they were at the time of the 2002 COIT survey. All but one of the respondents stated that DTIS could improve its quality of service. Clients responded that holding DTIS more accountable to its clients would be the most effective solution for improving DTIS' quality of service.

Clients were more satisfied with the quality of three specific services that we surveyed – public safety, mainframe, and applications development and DBA – than with DTIS' services overall. They provided the following positive responses:

- Public safety service clients were satisfied with the work that DTIS staff perform and their responsiveness

- Mainframe clients were satisfied with the consistency and reliability of the mainframe information
- Applications development and DBA clients were satisfied with the quality of service, responsiveness of DTIS staff, and DTIS' ability to complete their specific projects on time and within budget

Despite these positive comments, clients offered specific suggestions for improvements within these services such as:

- Cross-train public safety services employees within the various functional units to achieve efficiency and lower costs
- More frequently update the records of whom to contact when a building alarm goes off
- Adhere to the E911 service desk's escalation procedures (i.e., measures for handling higher priority requests)

Clients expressed dissatisfaction with the following:

- Billing and costs (discussed in Finding 1.1)
- Lengthy delays with support and projects (other than those for applications development and DBA services)
- Mainframe help desk operators lack of knowledge of where to send clients for assistance

Despite multiple surveys showing a need for improvement, DTIS has not established a mechanism to measure overall customer satisfaction or satisfaction with specific services. It does not conduct its own surveys, conduct project-specific evaluations, or have a system to track customer complaints by type. DTIS' 2005 Efficiency Plan set a goal to conduct an annual benchmarking survey on customer satisfaction, but DTIS has not yet done so. Without measuring customer satisfaction, DTIS will not be able to focus on its weaknesses and take corrective action in the areas that warrant attention. Without corrective action, clients are likely to seek IT services elsewhere.

Recommendations:

6. DTIS should develop a customer service evaluation and improvement plan with actions for improving satisfaction with services, costs, and accounting. The plan should include measurable objectives and actions to improve

client satisfaction and ways that DTIS will advertise its successes to clients.

7. DTIS should survey customer satisfaction with services, costs, and accounting at least annually in order to gauge success or areas needing improvement. The survey results should be incorporated into the customer service improvement plan and reported annually through the budget process.

8. DTIS should use the results of its customer satisfaction surveys to justify additional enterprise services that it proposes to take on. Additional responsibilities for DTIS in citywide IT and telecommunications services should be dependent on its capacity and historical performance but should also be based on client's satisfaction and trust in DTIS' capacities.

Finding 1.3. Consolidate Functions to Save $1 Million Annually and Eliminate Duplicate Costs

DTIS can save approximately $729,000 annually and improve its efficiency and customer service by consolidating its three help desk functions and by consolidating or eliminating operator and monitoring functions that overlap or duplicate those provided by other departments. The City can save over $285,000 by eliminating duplicate costs for website services that departments purchase from vendors or provide with their own staff.

Consolidate Three Help Desks to Save $729,000 Annually and Improve Customer Service

Consolidating its help desks would improve customer service and eliminate the need for ten positions, which would save DTIS approximately $729,000 annually. DTIS has three separate help desk functions that cost $1.2 million annually for labor, including thirteen 1022 IS Administrator II positions and two 1024 IS Administrator-Supervisor positions distributed as follows:

- The general help desk tracks incoming service requests and responds to general service questions; it is staffed by two employees and a manager

- The telecom help desk responds to issues related to equipment and service moves, adds, and changes; it is staffed by three employees
- The E911 service desk supports the public safety emergency systems and other public safety requests and operates 24-hours a day; it is staffed by six employees, one manager, and two part-time employees

We estimate that DTIS could reasonably operate a consolidated help desk function with four 1022s and one 1024 manager. This estimate is based on a formula developed by Microsoft specifically for estimating staffing needs of a help desk. We reviewed the calls and incidents of the general help desk, telecom help desk, and the E911 service desk and estimated that together, the help desks manage about 36 incidents per day. We assumed that the average time a help desk employee spends per incident is 30 minutes. This is a high estimate considering that other jurisdictions reported spending 12 and 15 minutes per incident. However, in order to provide a reasonable estimate of staffing needs, we used 30 minutes for our calculation. We assumed a utilization rate (percentage of time resolving incidents) of 75 percent. Finally, we estimated 78 percent availability based on actual department leave time during the first half of FY 2005-06. Our calculation is shown below:

$$\frac{\text{Incidents (36)} * \text{Average Time Spent Resolving an Incident (0.5 hours)}}{\text{Available Time (8 hours)} * \text{Utilization Rate (75\%)} * \text{Availability (78\%)}} = \frac{\text{18 hours}}{\text{4.68 available hours}} = \textbf{3.85 persons}$$

Our estimate does not include 24-hour staffing for the E911 service desk because the after-hours service desk workload indicates that this function could be consolidated with its other 24-hour monitoring and dispatching services:

- 73 percent (10,010 of 13,691) of all incidents came between the hours of 7:00 a.m. and 6:00 p.m. from October 2003 through April 2006
- Only 164 (0.01 percent) of all incidents were priority 1, which are critical incidents that must be addressed immediately
- Only 27 of the priority 1 tickets were opened between 6:00 p.m. and 7:00 a.m., which equates to one after-hours priority 1 incident every 34 days

Consolidation would improve customer service and DTIS' ability to achieve the help desk industry standard of "first call resolution" by eliminating some of the need to transfer calls for resolution. Currently, clients contact the help desk expecting resolution, but the issues are frequently addressed by other non-help desk DTIS staff. For example, from January 2005 through March 2006:

- Only 39 percent (2,879 of 7,360) of the calls to the general and telecom help desk were assigned to the help desk staff. The other 61 percent were assigned to other DTIS staff for resolution.
- Only 41 percent (3,648 of 8,823) of the incidents opened by the E911 service desk were assigned to the service desk staff. The other 59 percent were assigned to other staff for resolution.
- Calls are also forwarded from one help desk to another. For example, the E911 service desk received 352 calls that it forwarded to the general help desk.

Redirecting calls from one help desk to another or assigning them elsewhere contributed to DTIS reporting that it resolved only 33 percent of its general help desk calls within the first call resolution standard during FY 2005-06. DTIS does not track the percentage of calls answered within the standard for the E911 service desk.

Consolidating the help desks would also achieve internal efficiency and improve service to clients by eliminating overlapping duties and responsibilities and allowing DTIS to standardize its help desk policies and procedures. Currently, DTIS does not track the aggregate efforts of all help desks and does not produce reports regarding the types of calls and problems that would allow it to achieve efficiencies. Service desk consolidation would allow DTIS to standardize its tracking tools and reports so it can evaluate the number and types of calls received and calculate the true cost of providing help desk support to clients.

Consolidating the help desks would achieve compliance with industry standards which recommend help desk consolidation to achieve capital cost savings and IT labor efficiencies, and to increase service levels to users. An ITIL compliance report issued in 2004 recommended that DTIS integrate its help desks to create a single point of contact for all clients and to bring staff to a skilled level within six months. Peregrine, creator of the help desk software that DTIS uses, issued a white paper in October 2005, which concluded that service desk consolidation is not just a good idea, but a necessity and economic imperative that will grow more critical over time. DTIS' three help desks and the multiple points of contact run contrary to industry standards, which recommend a central point of contact for all questions or service requests and to track, route, and respond in a prioritized and systematic way.

The actual savings will depend on DTIS' final assessment of how to consolidate and staff the help desk function. However, our estimate shows that DTIS can achieve savings of approximately $729,000 and maintain appropriate staffing levels for a consolidated help desk function.

Consolidate Overlapping Operator and Monitoring Functions

The City could achieve efficiencies and reduce its costs by consolidating some of DTIS' operator and monitoring functions. The amount of savings will be determined by how DTIS restructures its operator and monitoring functions and the number of functions it can move to other departments. Additionally, the City is embarking on a comprehensive 3-1-1 system which presents an opportunity for DTIS and City departments to consolidate their operator and monitoring functions to maximize efficiency and reduce costs.

Multiple DTIS employees perform operator functions that are similar to functions performed by other departments. DTIS has two operators who answer the City's main telephone line and DTIS' main line during business hours. DTIS also has one person at the Central Fire Alarm Station (CFAS) at 1011 Turk who answers the City's main number and receives other types of calls after hours, including calls for:

- PBX[3]-related issues
- Assistance with elevators that are out of service
- Construction emergencies, construction noise complaints, and other related issues after 3:00 p.m. for the Public Utilities Commission and the Department of Public Works (DPW)
- Traffic signal complaints after 3:00 p.m. and on weekends and holidays

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[3] Short for *private branch exchange*, PBXs are private telephone networks used within an enterprise.

Other City departments provide similar operator functions. For example, DPW's Bureau of Street Environmental Services (BSES) has a 24-hour service line that the Public Utilities Commission Wastewater Enterprise now also uses for after-hours and holiday calls dealing with sewer problems. These sewer-related problems were previously handled by the DTIS CFAS group.

Overlap also occurs in the systems monitoring roles and responsibilities of the DTIS Public Safety Services Division because two groups, CFAS and System Watch, monitor some of the same systems. Areas of overlap include testing community security cameras and monitoring the City's Auxiliary Water Supply System and the Outdoor Public Warning System (formerly known as the SIRENS system).

DTIS has added system monitoring roles and responsibilities without determining whether these services are provided in the most efficient and economical manner. While overlapping functions might create redundancies that help prevent incidents being missed, the overlap should be planned, documented, and evaluated frequently rather than occurring haphazardly as technology, systems, and needs change.

Clients suggested that DTIS improve its service and lower its costs by consolidating its operator and monitoring functions and by cross training employees within the various Public Safety Services groups (CFAS, System Watch, and E911 service desk). DTIS has recognized the need for integration and cross training and has made some improvements, including job rotation and alternate work schedules among the systems watch staff. However, more consolidation and integration can occur in duties and responsibilities, as well as in systems monitoring and tracking.

DTIS Can Lower City Costs by Monitoring and Maintaining All Alarms for City Buildings

DTIS monitors and maintains fire and burglar alarms for various City buildings, but some departments pay vendors for the same type of work. We could not determine the extent to which departments pay vendors for alarm monitoring and maintenance because the City does not maintain a central listing of amounts paid for these specific services. Some of the work might be included in other security-related contracts such as security guard services. Additionally, the amounts paid for monitoring versus maintenance work are not easily distinguishable and vary by contract.

According to DTIS, vendors that provide alarm monitoring for City departments contact the Police or Fire Department through the City's dispatchers. Both DTIS and other department staff agreed that it makes sense for DTIS to monitor all City alarms to achieve operational efficiencies.

Despite potential savings for the City of having DTIS monitor and maintain all alarms, there are certain limitations. In some cases, switching the alarms so that they are monitored by DTIS can be done without much work. However, in other cases, an investment needs to be made for the transition from vendor to DTIS for monitoring service. The cost of the transition would depend on the internal wiring of the buildings and the condition that the vendors leave them in after pulling out the existing alarms.

Even if DTIS is able to take on more alarm monitoring duties, it is limited in its capacity to take on more alarm maintenance responsibilities. In a survey of DTIS alarm clients, most were satisfied with the monitoring and maintenance work, but some indicated that the DTIS group that provides the maintenance work was already stretched in its responsibilities.

Departments Pay Both DTIS and Others for Website Services; City Can Save Over $285,000

The City could save over $285,000 of its annual contract and labor costs if all departments hosted and maintained their websites through DTIS. DTIS maintains a city-affiliated website on *www.sfgov.org* for each department/agency, but 24 departments/agencies have only a home page which directs visitors to a website outside *www.sfgov.org*. Of these 24 departments/agencies, 12 can be considered sufficiently distinct to justify having an external website (e.g., SFO Airport, various museums).[4]

The remaining 12 departments pay DTIS for presence on *www.sfgov.org* and also pay other parties (vendors or the City's Reproduction Services within the General Services Agency) or their internal staff to maintain and support their external websites. These 12 departments estimate that they spend approximately $69,000[5] annually to host and support their external websites. DTIS believes that this is low and has estimated that a department typically spends between $12,000 and $18,000 a year to design, host, and maintain an external website. We estimated what these 12 departments are paying based on their estimated cost, plus a labor cost that includes 0.5 full-time equivalent (FTE) of a 1052 Information Systems (IS) Business Analyst for departments that support their website internally and 0.1 FTE of a 1052 IS Business Analyst for vendor-supported websites. The table below shows what these departments pay DTIS annually for web presence and our estimates of what it likely costs them to maintain and support their external websites.

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[4] DTIS stated that external services are justifiable for certain departments that are unique in their scope, function, and needs for their websites. However, DTIS does not make or propose policy with respect to who should or should not use website services outside of DTIS.

EXHIBIT 3 **Duplication of Web Service Cost**

Department	Amount Paid to DTIS (FY 2005-06)	Estimated Additional Cost of External Website
Adult and Aging Department and Commission	Funded through HSA	$ 23,490
Arts Commission	$ 9,910	9,937
Children, Youth & Their Families Department and Commission	19,820	48,057
Environment Department (including Urban Forest Council)	9,910	23,396
Human Services Agency	14,865	23,490
Municipal Transportation Agency (including Municipal Railway)	9,910	11,396
District Attorney	9,910	9,936
Public Health Department and Commission	19,820	86,979
Public Utilities Commission	9,910	17,196
Reproduction and Mail Services	14,865	11,896
Sheriff	9,910	9,996
War Memorial/Performing Arts Center	9,910	9,696
Total	**$138,740**	**$285,465**

Source: DTIS billing records, department's estimates, and selected labor rates

DTIS and Reproduction Services are part of the General Services Agency, and both entities provide website services, although maintenance of the City's website is a specific responsibility of DTIS. Clients who purchased website services from Reproduction Services also paid DTIS for service, which resulted in duplicate payment for website services that are already available to clients and inefficient use of City resources.

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[5] $40,000 of this figure was the Department of Public Health's estimate; the remaining $29,000 was for the 11 other departments.

The 12 departments consistently cited the following reasons for not using DTIS to provide all of their website services:

- They want control over their site
- They want to ensure a high quality of customer service
- They do not like the DTIS site layout and its capabilities

However, DTIS staff stated that their content management software makes it very simple to control a website and ensure a high quality product while allowing for seamless usability. Usability is important because it provides a familiar interface across all City websites, thereby increasing overall efficiency and the likelihood of users returning to the site and knowing how to navigate through it. DTIS also provides a level of security through its redundant network, and departments outside of *www.sfgov.org* might not have the same level of protection that is offered by an enterprise-wide system.

Recommendations:

9. DTIS should consolidate all its help desk functions to provide clients a single point of contact and achieve cost savings and efficiencies. DTIS should standardize its policies and procedures for its help desk functions and begin to aggregately track performance measures such as:
    - Number of requests
    - Average resolution time for each ticket (by priority)
    - Percentage of requests resolved by the help desk industry standard of "First Call Resolution"

    DTIS should also track information that allows it to make proactive decisions regarding the most frequent types of requests. Reports or queries from the help desk software should allow DTIS to determine:
    - The most common (category or problem) type of requests
    - The most frequent location of requests
    - The most frequent caller departments

10. DTIS should perform a staffing and capacity analysis to determine how it can overcome the current obstacles to integration and efficiency and consolidate its operator and monitoring functions. DTIS should eliminate those responsibilities that can be effectively performed by others (e.g., after-hours call answering that will be better handled

by operators through the 3-1-1 system) and focus on its key strengths and areas of technical expertise like monitoring and troubleshooting.

11. DTIS should work with the Office of Contract Administration and other departments to identify all fire and burglar alarm monitoring and maintenance being performed by vendors. DTIS should identify its capacity to monitor and maintain additional alarms, estimate the cost savings associated with acquiring the alarm work, prioritize the additional alarm work that it has the capacity to pursue, develop a work plan, and coordinate with departments to acquire responsibility for the work. If the cost savings that can be achieved by performing the work in-house exceed DTIS' existing capacity to perform the work, DTIS should prepare and submit a budget allocation to the Mayor's Office with justification based on the long-term cost savings.

12. DTIS should draft a citywide policy regarding the use of DTIS versus other sources for website services, which should include criteria for when departments may use a website outside of *www.sfgov.org*. DTIS should seek formal adoption of the policy from the Mayor's Office and/or COIT. Once adopted, DTIS should stop charging for a single page of website presence when departments meet the criteria. DTIS should also ensure that all other departments use the citywide system for website services, explore ways to allow the departments more flexibility in designing and updating their websites, and work with departments to address their concerns regarding website development and content so they can discontinue their use of external support.

13. The General Services Agency should consolidate the website services it provides to departments so that one single group within the agency provides the services and to ensure that clients are not paying both DTIS and Reproduction Services.

Finding 1.4. No Standard Project Management Approach or Current Project Listings Exist

DTIS could not ensure that it was appropriately managing its portfolio of projects because it did not use standard project management tools or maintain a current inventory of its application development and DBA projects. The lack of standard and consistent project management tools may lead to inefficient use of resources, ineffective outcomes, or even failure for many of its $18 million worth of application development and DBA projects that it conducts each year.

A current list of projects would provide a formal mechanism for staff to be aware of what others are working on, which would allow staff to collaborate on projects that have similar requirements or technical components. It would also allow DTIS to seek opportunities to develop citywide application solutions by identifying similar requirements or technical components of projects. While this is still possible without a written list of projects, a list makes collaboration more likely because it provides a reference point for all. A project inventory is a basic management tool and some cities and counties post them on their websites to give clients and the public a sense of the type and scope of work being conducted.

DTIS spent $102,400 to train its project managers and develop a project management office, and also developed an internal project management manual for its application development and DBA services. However, DTIS discontinued funding for the office before it was implemented and project managers do not use either the established methodology or a generally recognized project management approach.

A recent study by the Center for Project Management showed that robust project management techniques are imperative to avoid costly mistakes and a corresponding waste of resources. The study showed that nearly 40 percent of IT projects are abandoned before completion and that 80 percent of managers do not identify criteria to critically evaluate their projects. Two common project management tools are service level management and service level agreements (SLAs). Service level management is a technique used to measure IT processes in a consistent and verifiable manner and often use SLAs as an enforcement instrument. SLAs formalize the expectations of a service by defining the roles and responsibilities for each party to mitigate the possibility of misunderstandings about a project's scope and expected outcome.

DTIS' project managers use varying methods to manage their projects and budgets, which include working on a close but informal basis with client departments to assess the needs of each project. The project managers rely on oral communications with clients and some use written project plans – a list of tasks and schedules. As a result, DTIS cannot ensure that it has mutual agreement with its clients regarding the expected outcomes of each project, that it is spending its resources to achieve the results expected by its clients, or that it can evaluate the success or failure of each project.

Recommendations:

14. DTIS should implement a generally recognized project management approach that includes performance measurement, service level agreements, and other project management tools that ensure accountability.

15. DTIS should develop and maintain an inventory listing and description of its application development and DBA projects. The listing should be available to staff to raise awareness of what others are working on and encourage collaboration and discussion of solutions for individual projects and citywide applications.

CHAPTER 2 – PERFORMANCE MEASURES

Finding 2.1. Performance Measures Not Meaningful and Reported Results Not Reliable

We reviewed DTIS' 19[6] performance measures and rated each one based on its meaningfulness and the reliability of its reported results. DTIS reported reliable and accurate results for only three measures and only ten measures were meaningful and useful. Without reliable and meaningful performance measurement information, it is difficult for DTIS to identify its successes and areas needing improvement. DTIS cannot use performance information, or will use erroneous information, to set goals, allocate resources, help managers make decisions, and improve delivery of services.

Reasons for the reported results not being reliable or accurate varied:

- What the measure is supposed to gauge varied from what the reported result actually represented. For example, DTIS reported that 99 percent of its website visitors found timely and valuable information. However, DTIS counted each website visitor who did not send an e-mail complaint to the webmaster as receiving timely and valuable information and calculated the measure based on the number of complaints received rather than on positive assertions from website visitors.
- DTIS used estimates rather than calculations to report some results. For example, DTIS estimated that 80 percent of repairs for portable radios were completed within the same day but did not calculate the actual percentage.
- DTIS did not track the information necessary to calculate some results. For example, DTIS reported that it prepared and delivered 100 percent of its telecom policy studies or recommendations according to agreed upon target dates. However, DTIS did not track the dates of completion or the agreed upon dates.
- DTIS reported results based on disparate or incomplete information. For example, DTIS reported that 98 percent of service requests were completed within the budget

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[6] We did not review the meaningfulness of two measures and the reliability of four measures because DTIS does not have a mechanism to measure or could not provide information to rate the measures.

agreed upon with the client. However, the result reported was based on incomplete information and each project manager calculated "completed within budget" using different data. Some based it on the budget of the specific project code and others based it on what they told the client.

Reasons for certain measures not being meaningful or useful also varied:

- DTIS used an inappropriate measure, which hid significant differences in performance. For example, DTIS measured reliability of systems as a percentage of "uptime" during the year rather than the actual time a system was down. Reliability reported at 99 percent could mean that a system was down any amount of time between 31.5 seconds and 87.6 hours (3.65 days).
- DTIS lacked influence over the result. For example, DTIS reported that 100 percent of all cable franchise complaints from subscribers were satisfactorily resolved within 24 hours. However, DTIS does not resolve the issue or advocate for clients. DTIS counts every call as satisfactorily resolved even though it does not do anything with the compliant, not even refer the call to the cable franchise.

The causes of deficiencies in reliability and meaningfulness include:

- DTIS has not assumed ownership of its performance measures and results. DTIS staff and management indicated that they had inherited measures from their predecessors. Some staff recognize the deficiencies with the measures and the need for improvement but have not proposed new measures or changed the current measures so that they gauge more meaningful outcomes.
- As DTIS' systems, processes, and functions have changed over the years, corresponding performance measures have not been developed and the methods and data sources required to calculate the existing performance measures have not been updated or maintained.
- Various people within the department calculate the measures, but DTIS lacks a review process to assess the reliability of the results reported or the usefulness of the measures.

The City's Administrative Code requires departments to establish performance indicators to measure or assess the relevant outputs, service levels, and outcomes of each program activity. DTIS reports its performance measures mid-year and annually to the Controller's Office and reports 11 of its measures each year in the Mayor's Proposed Budget. DTIS defines performance management as the use of performance information to set goals, allocate resources, help managers make decisions, and report results; it is intended to help DTIS improve delivery of services. DTIS states that it links its strategic priorities to performance goals and is working towards developing measures on all levels.

DTIS may make inappropriate management decisions because the lack of reliable and accurate performance results may not reveal areas that need improvement or may erroneously indicate that an area is performing well. For example, resources may not be allocated to improving DTIS' systems because they are assumed to be sufficiently reliable based on the reported percentage of uptime. However, since a system could be down for over 80 hours a year and be reported as reliable 99 percent of the time, DTIS and other City decision-makers may have a false level of confidence about the actual reliability of a system. The City cannot afford critical systems, such as those for public safety, to be down for hours, even if the reliability is 99 percent.

The lack of meaningful performance measures may also cause DTIS to miss opportunities to improve its performance and market its services to departments. If DTIS can reliably measure the percentage of service requests that it completes within budget or show that it can perform at a lower cost than a vendor, it could use this information to improve its adherence to budget and to market its service to departments. For example, DTIS provided information indicating that it had performed wireless service projects for much less than what vendors would have charged the City, but this type of success is not captured in any of DTIS' performance measures.

Recommendations:

16. First, DTIS should delete all measures rated as not meaningful. These measures consume time and resources to track, but the results do not reflect the department's performance and the information is of little or no use to the department.

17. Second, DTIS should review the remaining measures and determine if the reported results accurately reflect performance. Measures where significant differences in performance do not properly reflect the result should be either be deleted or changed so the results reflect actual performance.

18. DTIS should identify its key functions and operations and ensure that it has meaningful measures for each as required by the Administrative Code. DTIS should ensure that any new measures are meaningful to the department and accurately reflect the department's functions.

19. After performance measures have been selected and edited, DTIS should evaluate its systems to ensure that it can measure and report accurate (i.e., +/- 5%) results. DTIS should document its procedures for calculating the results for each measure. DTIS should retain documentation that supports the reported results for a minimum of three years and use the results internally to monitor and make improvements in its performance over time.

20. DTIS should establish a process to review the continued accuracy and meaningfulness of its performance measures on at least a yearly basis. DTIS should delete or revise measures that are no longer meaningful and update its procedures for collecting information and measuring performance to ensure the continued reliability of results.

21. DTIS should explicitly obtain management and staff buy-in for accurate, reliable, and meaningful performance measurement. DTIS should take firm ownership of its performance measures and should establish accountability and responsibility for the results of its measures among the various groups within DTIS.

CHAPTER 3 – BUILDING SECURITY

Finding 3.1. Restricted Areas at 901 Rankin Easily Accessible

DTIS has after-hours security for its facility at 901 Rankin, but restricted areas were open and unattended during business hours. We walked into restricted areas, photographed equipment, and observed that it would have been easy to take equipment and not be noticed. These security weaknesses existed despite approximately $43,000 worth of losses at 901 Rankin in the last three years due to break-ins and vandalism. Losses included parking meters, wiring cable, and extensive damage to service vehicles. DTIS and the Department of Parking and Traffic currently share this facility, which is used to store City equipment and supplies. The following pictures show unsecured exterior and interior areas that we accessed.

EXHIBIT 4 **Unsecured Areas**

Source: Audit staff photos

The site is currently equipped with cameras that are monitored by DTIS staff at 1011 Turk. DTIS installed motion detection devices on these cameras on a pilot basis to assist them in detecting intruders. DTIS also hired a security guard company to monitor the site after hours. The security guards have radios to communicate with the staff at 1011 Turk who monitor the cameras. Despite this investment in security, DTIS staff do not monitor the cameras during business hours and security guards only patrol the site after hours.

Any theft that may occur during business hours could go unnoticed because DTIS does not have an inventory management system and does not take inventory of its on-site equipment and supplies. Without an inventory management system, DTIS cannot determine if items have been lost, stolen, or missing and might not be able to calculate the dollar loss associated with missing equipment and supplies.

Recommendations:

22. DTIS should coordinate with the Department of Parking and Traffic to implement procedures to strengthen security at 901 Rankin and to ensure that restricted areas are monitored and that access to these areas is limited during all hours.

23. DTIS should develop an inventory management system to track the quantity and value of equipment and supplies at its facilities.

Appendix A – Performance Measures

Methodology: We reviewed the FY 2005-06 year-end results for the 19 performance measures that DTIS will report in the Controller's Office performance measure database. Eleven of these measures are typically reported in the Mayor's Proposed Budget. We reviewed the calculation methods and data sources that DTIS used to report results for each performance measure and evaluated each measure to determine the reliability/accuracy of the reported results and the meaningfulness/usefulness of each measure. We based our scoring system on the certification techniques developed by Maricopa County, AZ, but used two separate ratings because we considered reliability/accuracy and meaningfulness/ usefulness as different indicators of the quality of a performance measure. For each measure, we evaluated the complexity, consistency of definition and data source, internal controls, use of automation, usefulness to the department, the amount of influence DTIS has over the result, and whether it measures a service or outcome of the department. Based on the scores, we assigned each measure to a rating category. The categories are:

Reliability and Accuracy of Reported Results

Category	Definition
Premium Rating	Result is accurate (+/- 5%) or reliable, and adequate procedures are in place to ensure reliability.
"With Qualifications" Rating	High level of confidence about the accuracy of the result with some minor reservations about the data; procedures to ensure reliability and accuracy of the result can be improved.
Factors Prevented Rating as Reliable or Accurate	Could not rate the measure as reliable due to inadequate procedures, insufficient documentation, or multiple reservations and qualifications about the information or processes. We might have been able to rate the measure as reliable if additional information had been available or if we could have validated certain pieces of information used to calculate the result.
Unreliable and/or Inaccurate	Performance measure result is not accurate (+/- 5%) or is unreliable because of significant reservations and qualifications.

Meaningfulness and Usefulness of Measures

Category	Definition
Premium Rating	Measure is a good indicator of performance and gauges the actual services and outcomes of the department.
"With Qualifications" Rating	Measure is a good indicator of performance with minor exceptions in some of the following: • Department uses result to evaluate specific functions • Measures actual services and outcomes • Result is influenced directly by the department's efforts and actions • Measure can be easily understood in terms of what it is actually measuring
Factors Prevented Rating as Meaningful or Useful	Several qualifications and reservations regarding: • Department uses result to evaluate specific functions • Measures actual services and outcomes • Result is influenced directly by the department's efforts and actions • Measure can be easily understood in terms of what it is actually measuring We might have been able to rate the measure as meaningful if additional information had been available.
Not Meaningful or Useful	Little to no use; recommend eliminating

		RELIABILITY AND ACCURACY OF REPORTED RESULTS					MEANINGFULNESS AND USEFULNESS OF MEASURES				
	Performance Measure	Raw Score	Premium Rating (100%-90%)	"With Qualifications" Rating (89%-70%)	Factors Prevented Rating as Reliable (69%-40%)	Inaccurate and/or Unreliable (<40%)	Raw Score	Premium Rating (100%-90%)	"With Qualifications" Rating (89%-70%)	Factors Prevented Rating as Meaningful (69%-40%)	Not Meaningful and/or Useful (<40%)
1	Average number of days from the end of the prior month to complete interdepartmental project billing	35%				√	100%	√			
2	Average number of days to respond to client requests for information on telephone billing	24%				√	95%	√			
3	Reliability of the PBX network managed by DTIS	0%				√	20%				√
4	Reliability of Data Center backbone	0%				√	30%				√
5	Percentage of customer complaints resolved within 8 hours of receipt from customer	N/A	Could not evaluate because DTIS did not provide sufficient information.				95%	√			
6	Percentage of trouble tickets resolved by Help Desk - Industry standard of "First Call Resolution"	N/A	Could not evaluate because DTIS did not provide sufficient information.				90%	√			
7	Percentage of services that have internal escalation procedures in place	5%				√	70%		√		
8	Percentage of backups successfully restored	DTIS HAS NO MECHANISM TO MEASURE RESULTS									
9	Average customer rating of Hot Site effectiveness	DTIS HAS NO MECHANISM TO MEASURE RESULTS									
10	Percentage of telecom and technology related policy decision material research studies or recommendations prepared and delivered according to agreed upon target dates	0%				√	45%			√	
11	Percentage of all franchise complaints by subscribers with a satisfactory resolution within 24 hours	5%				√	5%				√
12	Percentage of service requests completed by the date agreed upon with the client	10%				√	75%		√		

		RELIABILITY AND ACCURACY OF REPORTED RESULTS					MEANINGFULNESS AND USEFULNESS OF MEASURES				
	Performance Measure	Raw Score	Premium Rating (100%-90%)	"With Qualifications" Rating (89%-70%)	Factors Prevented Rating as Reliable (69%-40%)	Inaccurate and/or Unreliable (<40%)	Raw Score	Premium Rating (100%-90%)	"With Qualifications" Rating (89%-70%)	Factors Prevented Rating as Meaningful (69%-40%)	Not Meaningful and/or Useful (<40%)
13	Percentage of service requests completed within the budget agreed upon with the client	10%				√	75%		√		
14	Percentage of the regular Board of Supervisors' meetings carried	93%	√				90%	√			
15	Availability of 24-hour government informational programming on Cable Channel 26	91%	√				55%			√	
16	Percentage of web site visitors who reported that they found timely and valuable information	80%		√			20%				√
17	Reliability of the public safety radio and wireless data system	1%				√	30%				√
18	Percentage of repairs for portable and mobile radios completed within the same day of the request	0%				√	85%		√		
19	Percentage of repairs for mobile data terminals completed within the same day of the request	0%				√	85%		√		
	TOTALS	N/A	2	1	0	12	N/A	5	5	2	5
	PERCENTAGE OF TOTAL MEASURES EVALUATED	N/A	13%	7%	0%	80%	N/A	29%	29%	12%	29%

APPENDIX B – DEPARTMENT RESPONSE TO AUDIT

CITY AND COUNTY OF SAN FRANCISCO

Chris Vein
Chief Information Officer

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DEPARTMENT OF TELECOMMUNICATIONS
AND INFORMATION SERVICES

Ron Vinson
Chief Administrative Officer

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November 13, 2006

Pablo Federico
Performance Audit Manager
Office of the Controller
1 Dr. Carlton B. Goodlett Place
Room 388
San Francisco, CA 94102

Dear Mr. Federico:

Please find attached the Audit Recommendation and Response Form relating to the Office of the Controller, City Services Audit of the Department of Telecommunications and Information Services (DTIS).

DTIS has relentlessly focused on improving our performance. As you recognized in the report, DTIS recently initiated a major restructuring of our organization, staffing, and processes and procedures. That restructuring will address all of your recommendations as well as other areas not covered by your audit.

Specifically, we have developed a three-year plan to radically change the funding model of DTIS and the rate model used to recover costs. Recognizing that DTIS must ensure and track a high level of customer service, a new division has been created that focuses solely on our pursuit of improvement. Finally, DTIS takes the security of City assets and employees very seriously and are in the process of improving even more our Rankin Street facility.

It has been a pleasure working with you and your team over the last 6 months. We look forward to future discussions on DTIS performance and the improvements we are making.

Respectfully,

Chris A. Vein
Chief Information Officer

cc: Edwin M. Lee, City Administrator

875 Stevenson Street, Fifth Floor • San Francisco, CA 94103-0948
Office: (415) 554-0800 • Facsimile: (415) 554-4733

Recommendation	Responsible Agency	Response
1. DTIS should simplify the rate model and restructure it to reflect the actual cost of services: • Reduce the number of product lines • Structure the units of service to reflect how costs are incurred (e.g., change the unit of service for public safety wiring work from number of devices to an hourly rate) and to allow clients to control their costs based on their use of services • Identify and explain the variable and fixed costs for each service in the *Rate Handbook*	DTIS	**Partially concur.** DTIS has a goal of simplifying the rate model it uses to determine client department costs. In August, DTIS convened a working group to develop a simplified rate structure for infrastructure and enterprise-wide costs for use in developing the FY08 budget. These changes are intended to both (1) simplify rates and (2) avoid stranded costs for fixed-cost services currently using variable-cost rates. Given the complexity of the rate model and the calendar for budget production, a review of and changes to additional services will be incorporated in subsequent year's budgets. Labor hours as a unit of service works best when the hours can be charged to an individual client. For infrastructure work such as the Public Safety Wiring System other units of measure are used to allocate the costs across users as fairly as possible. DTIS does, however, track all hours spent on all our services for rate development and validation. DTIS publishes an annual Rate Handbook which provides a thorough explanation of how each of the rates are derived and also explains what makes up the types of costs that are factored into the rates. The Rate Handbook is provided to all clients during the budget preparation process and is available online.
2. DTIS should remove from the rate model the costs of infrastructure work and enterprise services that are not affected by clients' level of use. DTIS should request a separate budget allocation for these services and revise its rate model accordingly.	DTIS	**Concur.** DTIS agrees with this recommendation and will propose it for the FY08 budget.

Recommendation	Responsible Agency	Response
3. DTIS should track the costs to provide each service and update the rate model annually to reflect actual costs. This should include developing policies and procedures for time entry and cost allocation and should allow clients to understand the relationship among budgeted work, percentage of work complete, and billing for each project.	DTIS	**Partially concur.** DTIS tracks the costs of providing each service and uses this information to build the budget and the rates for the following fiscal year. The rate model is built to balance to the proposed budget submitted to the Mayor's Office for the fiscal year in which the rates will be in effect. To base the rates on actual costs from a prior fiscal year would not allow DTIS to account for proposed changes in how we do business. The method we use has allowed us to meet the goal of recovering our actual costs. Some jurisdictions modify the rates during the fiscal year in accordance with actual expenditures. DTIS has not done this choosing instead to maintain the stability of the rates within the fiscal year so that departments can predict the costs and manage their work order budgets. DTIS distributes annual communications to staff by email on the subject of how to charge their time. DTIS agrees that there should be an official policy and procedure and will publish one.

Recommendation	Responsible Agency	Response
4. DTIS' billings should reflect the actual number of units of service provided to ensure clients receive fair and accurate bills.	DTIS	**Do not concur.** There is no intent to deceive clients by publishing one rate and charging another. In fact, DTIS believes that of all the work order departments, DTIS's budget and billing system, although complex, is the most open, detailed and accessible to clients. In FY06 DTIS rolled out an online billing system that provides very detailed drill down information on all billed costs. The response from our users has been very positive. DTIS bills clients based on the actual units used with certain exceptions: 1) The budget cuts made by the Board are effected in the DTIS budget but, instead of re-running the rates to incorporate those changes, the Controller balances the work orders by reducing the 5 – 10 largest work orders to DTIS. In order not to have these work order reductions impact the service delivery, DTIS makes the adjustment on the fixed cost product lines that are allocated rather than billed by actual usage; 2) Certain joint costs of running the criminal justice systems are captured and then allocated back to all the criminal justice departments using a percentage formula that was proposed and agreed upon by those customer departments. 3) Some fixed costs are allocated based on prior year rather than current year actuals.
5. Before accepting an off-budget project, DTIS should identify its funding source, how its cost will impact the allocation of costs among city departments, and whether resources will have to be reallocated from existing projects.	DTIS	**Concur.** DTIS agrees but this is contingent upon certain factors. If the Mayor's Budget Office approves a proposal to move the infrastructure and enterprise costs to the General Fund is approved, this issue will be resolved as well since the remaining service offerings will be primarily labor-related and usage based. When unanticipated off-budget work is accepted DTIS often uses temp-as-needed staff to meet the demand.

Recommendation	Responsible Agency	Response
6. DTIS should develop a customer service evaluation and improvement plan with actions for improving satisfaction with services, costs, and accounting. The plan should include measurable objectives and actions to improve client satisfaction and ways that DTIS will advertise its successes to clients.	DTIS	**Concur.** DTIS agrees and plans to pursue this recommendation. A detailed Customer Service Plan is included in the annual DTIS Efficiency Plan. Unfortunately, many of the actions have not been implemented due to severe funding cuts. In the FY 06-07 budget however, the Board approved a Customer Services manager position that was defunded in order to balance the department's budget in FY 05-06.
7. DTIS should survey customer satisfaction with services, costs, and accounting at least annually in order to gauge success or areas needing improvement. The survey results should be incorporated into the customer service improvement plan and reported annually through the budget process.	DTIS	**Concur.** DTIS agrees and plans to pursue this recommendation.
8. DTIS should use the results of its customer satisfaction surveys to justify additional enterprise services that it proposes to take on. Additional responsibilities for DTIS in citywide IT and telecommunications services should be dependent on its capacity and historical performance but should also be based on client's satisfaction and trust in DTIS' capacities.	DTIS	**Concur.** DTIS agrees and plans to pursue this recommendation.

Recommendation	Responsible Agency	Response
9. DTIS should consolidate all its help desk functions to provide clients a single point of contact and achieve cost savings and efficiencies. DTIS should standardize its policies and procedures for its help desk functions and begin to aggregately track performance measures such as: • Number of requests • Average resolution time for each ticket (by priority) • Percentage of requests resolved by the help desk industry standard of "First Call Resolution" DTIS should also track information that allows it to make proactive decisions regarding the most frequent types of requests. Reports or queries from the help desk software should allow DTIS to determine: • The most common (category or problem) type of requests • The most frequent location of requests • The most frequent caller departments	DTIS	**Concur.** DTIS agrees and plans to pursue this recommendation. DTIS has been actively engaged in evaluating and planning the implementation of a practical approach to improve and standardize customer service for the client departments that DTIS serves. DTIS recognizes that there is a business need for a consolidation and integration of customer services to improve operational efficiency, extend service types, hours of services, performance measurements, and response times. DTIS has recently realigned it business divisions to actively address a comprehensive customer service plan, which includes consolidation of services and extending cross training to staff to support a wider range of customer service functions. While DTIS agrees that there are operational and cost efficiencies to be achieved it is believed that cost savings should not just be identified as cost savings through reduction in force. Demands for service from DTIS have been growing steadily and a way to address and meet this demand is by extending customer service capabilities through a consolidation of overlapping and monitoring functions and cross training of staff.
10. DTIS should perform a staffing and capacity analysis to determine how it can overcome the current obstacles to integration and efficiency and consolidate its operator and monitoring functions. DTIS should eliminate those responsibilities that can be effectively performed by others (e.g., after-hours call answering that will be better handled by operators through the 3-1-1 system) and focus on its key strengths and areas of technical expertise like monitoring and troubleshooting.	DTIS	**Concur.** DTIS agrees and plans to pursue this recommendation. A staffing and capacity planning process was begun as part of the DTIS realignment in September of 2006. An initial plan will be developed and in place by the end of December 2006. DTIS is also working with the staff at 311 to integrate current operator functions with those to be located at the new 311 call center.

Recommendation	Responsible Agency	Response
11. DTIS should work with the Office of Contract Administration and other departments to identify all fire and burglar alarm monitoring and maintenance being performed by vendors. DTIS should identify its capacity to monitor and maintain additional alarms, estimate the cost savings associated with acquiring the alarm work, prioritize the additional alarm work that it has the capacity to pursue, develop a work plan, and coordinate with departments to acquire responsibility for the work. If the cost savings that can be achieved by performing the work in-house exceed DTIS' existing capacity to perform the work, DTIS should prepare and submit a budget allocation to the Mayor's Office with justification based on the long-term cost savings.	DTIS	**Concur.** DTIS agrees and plans to pursue this recommendation.
12. DTIS should draft a citywide policy regarding the use of DTIS versus other sources for website services, which should include criteria for when departments may use a website outside of *www.sfgov.org*. DTIS should seek formal adoption of the policy from the Mayor's Office and/or COIT. Once adopted, DTIS should stop charging for a single page of website presence when departments meet the criteria. DTIS should also ensure that all other departments use the citywide system for website services, explore ways to allow the departments more flexibility in designing and updating their websites, and work with departments to address their concerns regarding website development and content so they can discontinue their use of external support.	DTIS	**Concur.** DTIS agrees and plans to pursue this recommendation. DTIS will propose moving the costs of maintaining the City's website to the General Fund in FY08. DTIS will also draft the recommended policy and seek COIT and Board approval. Those departments that do not use the DTIS services will need to budget the costs to maintain their own websites. Furthermore, DTIS has submitted a proposal for a major overhaul of the city's web design and content management. The department has received Mayor's office approval and is currently waiting for funding.

Recommendation	Responsible Agency	Response
13. The General Services Agency should consolidate the website services it provides to departments so that one single group within the agency provides the services and to ensure that clients are not paying both DTIS and Reproduction Services.	GSA	**Concur.** DTIS agrees and plans to pursue this recommendation.
14. DTIS should implement a generally recognized project management approach that includes performance measurement, service level agreements, and other project management tools that ensure accountability.	DTIS	**Concur.** DTIS does have a standard approach but had to cut funding for PMO as a result of the reduction in client revenues. Nevertheless, DTIS is beginning anew in FY 06-07 by developing internal PM templates and policies and procedures. DTIS plans to pursue the PMO in FY08 with the reorganization of the department and plans to submit a budget proposal to fund this approach.
15. DTIS should develop and maintain an inventory listing and description of its application development and DBA projects. The listing should be available to staff to raise awareness of what others are working on and encourage collaboration and discussion of solutions for individual projects and citywide applications.	DTIS	**Concur.** DTIS has a listing of projects for accounting and billing purposes. DTIS will soon be creating a new project management office which can expand upon the accounting list to meet project management monitoring.
16. First, DTIS should delete all measures rated as not meaningful. These measures consume time and resources to track, but the results do not reflect the department's performance and the information is of little or no use to the department.	DTIS	**Concur.** DTIS has created a Performance Division that will focus on ensuring that high-quality services are provided based on standard and repeatable best practices. One of the Department's most senior managers has been charged with leading this effort. DTIS is currently working to reassess its performance measures to ensure that they are meaningful and have the appropriate systems in place to accurately measure and track department results. DTIS plans to have these new measures in place for the FY08 budget proposal.

Recommendation	Responsible Agency	Response
17. Second, DTIS should review the remaining measures and determine if the reported results accurately reflect performance. Measures where significant differences in performance do not properly reflect the result should be either be deleted or changed so the results reflect actual performance.	DTIS	**Concur.** See response to recommendation #16.
18. DTIS should identify its key functions and operations and ensure that it has meaningful measures for each as required by the Administrative Code. DTIS should ensure that any new measures are meaningful to the department and accurately reflect the department's functions.	DTIS	**Concur.** See response to recommendation #16.
19. After performance measures have been selected and edited, DTIS should evaluate its systems to ensure that it can measure and report accurate (i.e., +/- 5%) results. DTIS should document its procedures for calculating the results for each measure. DTIS should retain documentation that supports the reported results for a minimum of three years and use the results internally to monitor and make improvements in its performance over time.	DTIS	**Concur.** See response to recommendation #16.
20. DTIS should establish a process to review the continued accuracy and meaningfulness of its performance measures on at least a yearly basis. DTIS should delete or revise measures that are no longer meaningful and update its procedures for collecting information and measuring performance to ensure the continued reliability of results.	DTIS	**Concur.** See response to recommendation #16.

Recommendation	Responsible Agency	Response
21. DTIS should explicitly obtain management and staff buy-in for accurate, reliable, and meaningful performance measurement. DTIS should take firm ownership of its performance measures and should establish accountability and responsibility for the results of its measures among the various groups within DTIS.	DTIS	**Concur.** See response to recommendation #16.
22. DTIS should coordinate with the Department of Parking and Traffic to implement procedures to strengthen security at 901 Rankin and to ensure that restricted areas are monitored and that access to these areas is limited during all hours.	DTIS	**Concur.** DTIS has taken several measures to improve security: 1) added additional razor wire to the perimeter fencing; 2) locked the front gate at all times requiring a key for entry; 3) relocated valuable wire stock from the yard to inside warehouse storage; 4) restricted access to the inventory storeroom to designated employees; 5) will install a security intrusion monitoring system by January 2007.
23. DTIS should develop an inventory management system to track the quantity and value of equipment and supplies at its facilities.	DTIS	**Concur.** DTIS has an inventory management system that is also used for procurement. With the volume of procurement DTIS handles there is not sufficient staffing resources to perform the management function as we would like. DTIS will request additional inventory and procurement staffing resources in FY08.